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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,584

04/25/2005

Samuel P. Kounaves

TU-2007US02

1732

41244

7590

05/15/2009

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EXAMINER

NOGUEROLA, ALEXANDER STEPHAN

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

05/15/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/517,584	<b>Applicant(s)</b> KOUNAVES, SAMUEL P.	
	<b>Examiner</b> ALEX NOGUEROLA	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 6 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed February 02, 2009 have been fully considered but they are not persuasive.

Claims 1-4 and 6-12 are obvious under 35 U.S.C. 103(a)

2. The Examiner disagrees with Applicant's characterization of Glesener and indeed the claimed invention. Claim 1 is presented below.

1.  
(Original) An apparatus for measuring total organic carbon in an aqueous solution,  
comprising:
  - a) an electrochemical cell comprising: i) a diamond-film electrode; ii) a reference electrode; and iii) a counter electrode; and
  - b) one or more carbon dioxide sensors, including at least one gas-phase sensor.

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As stated in the previous Office action in the rejection of claim 1,

Addressing claim 1, Glesener discloses an apparatus for measuring total organic carbon in aqueous solution (col. 04:59-62), comprising:

- a) an electrochemical cell (col. 04:45-47) comprising:
  - i) a diamond-film electrode (col. 04:51); and
  - ii) a counter electrode (col. 04:51-52 – stainless steel cathode); and
- b) a carbon dioxide sensor, including at least one gas-phase sensor (col. 04:62-67).

Glesener does not mention also using a reference electrode in the example relied on above. However, Glesener does disclose providing a reference electrode in an embodiment in which the diamond-film electrode is used as a measurement electrode rather than as a “combustion” (oxidation) electrode.

In Applicant's view the LI-COR Model LI-6252 CO<sub>2</sub> analyzer used by Glesener (col. 04:62-67) to determine TOC is not a carbon dioxide sensor, including a gas-phase sensor. The Examiner emphatically disagrees. Below is a table of LI-6252 CO<sub>2</sub> Analyzer Specifications

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### LI-6252 CO<sub>2</sub> Analyzer Specifications

<a href="#">LI-7000</a>	Analyzer Type	Differential, non-dispersive, infrared (NDIR) gas analyzer.
<a href="#">LI-7500</a>	Detector Type	solid state (no sensitivity to motion)
<a href="#">LI-6262</a>	CO <sub>2</sub> Detection Wavelength	4.26 microns
<a href="#">LI-6252</a>	CO <sub>2</sub> Calibration Range	0 to 3000 ppm (absolute)
<a href="#">LI-800</a>	Maximum Pressure	17 kPa
<a href="#">GasHound</a>	Maximum Flow Rate	10 liters/min
<a href="#">Literature Request</a>	Output	
<a href="#">FAQ's</a>	RS-232C	Software selectable parameters
<a href="#">[?] [?]</a>	Voltage	2 channels, 100mV or 5V full scale, linear; 12-bit D/A conversion
	Current Loop	2 channels, 4-20mA output
	Display	2 line x 16 character backlit LCD
	Power Requirements	User selectable at 100-130 VAC or 200-260 VAC (47-65 Hz); or 10.5-16 VDC, 1.5 amp maximum
	Dimensions	33.5W x 13H x 24cm D 13.2W x 5.1H x 9.5" D
	Weight	3.5 kg (7.7 lb.)

Downloaded on May 12, 2009 from

<http://www.eol.ucar.edu/isf/facilities/isff/sensors/LiCor/li6251/6252spec.htm>

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It is clearly a gas-phase carbon dioxide sensor. Applicants' view that "Glesener device is fundamentally different than the device of the present invention" is especially remarkable in view of claim 3, which requires the gas-phase sensor be a tunable diode laser spectrometer.

Thus, the rejections of claims 1-4 and 6-12 are maintained.

***Status of the Rejections pending since the Office Action of February 02, 2009***

3. The rejections of claims 1-4 and 6-12 under 35 U.S.C. 103(a) as being obvious over Glesener as modified by Swain, Kunimatsu or Zen are maintained.

4. The rejections of claims 5 and 13 under 35 U.S.C. 103(a) as being obvious over Glesener as modified by Swain, Kunimatsu or Zen, and Nishino are withdrawn.

5. The rejections of claims 6, 12, and 13 under 35 U.S.C. 1112, second paragraph, are withdrawn.

***Allowable Subject Matter***

6. Claims 5 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

a) Claims 5 and 13 each require at least one gas-phase carbon dioxide sensor *and* an aqueous-phase ion-selective carbon dioxide sensor. The sensor of Nishino would be a substitution for the LI-COR Model LI-6252 CO<sub>2</sub> analyzer used by Glesener, not in addition to it, especially since (a) Nishino discloses that IR detectors are expensive and are not small, and (b) Glesener already discloses that the electrochemical cell could be used as an aqueous-phase sensor as well as means for generating CO<sub>2</sub>. See Glesener col. 03:33-52; col. 05:49 – col. 06:03; and col. 06:35-42.

***Final Rejection***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX NOGUEROLA whose telephone number is (571) 272-1343. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NAM NGUYEN can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Alex Noguerola/  
Primary Examiner, Art Unit 1795  
May 12, 2009